

Re: Lockheed treatment summary attached



11/21/2012 11:28 AM

Harry Craig to: Christy Brown

Cc: Carla Fisher, Emerald Laija, Kevin Schanilec, Linda Meyer, Mary Queitzsch, Thabet Tolaymat, Dennis Faulk, Cami Grandinetti

Christy,

One of the relevant items I missed on your attached Lockheed treatment review is that on 3/1/12, Arcadis installed a compressor at the CDS open top tank, and the notes say that "Now have air injecting into the CDS Tank", which is clearly air stripping and not bioremediation. Their molasses additions are supposed to be anaerobic (i.e. without oxygen) bioremediation, so addition of air or oxygen is clearly inconsistent with the objective of anaerobic bioremediation. Also, I doubt that there is anything in the RCRA Permit that allows air stripping in the open top tank as part of the remedy.

Also, I came across a very interesting bench scale air stripping test of aqueous phase HCN, where the continued addition of air into the aqueous HCN caused a drop in pH due to the CO2 present in ambient air, which substantially increased the volatilization of HCN out of aqueous phase. This is entirely consistent with theoretical behaviour of HCN based on shifts in pH from CN- to HCN (aq). This also probably explains why injecting CO2 into the RCRA Landfill increases the volatilization of HCN, not biodegradation of HCN. Anaerobic biodegradation of HCN produces ammonia and methane, aerobic biodegradation of HCN produces ammonia and CO2.

I remain unconvinced that Arcadis really knows what they are doing with regard to (alleged) biotreatment. The lack of mass balance is not evidence of biodegradation, as they seem to claim. I think we need to proceed with a requirement for L-M to conduct bench scale treatability studies to actually demonstrate leachate biodegradation rather than air stripping or volatilization occurs.

Let me know if you have any comments. Thanks for all your hard work going through all of these records.

Regards,

Harry



Cyanide-AirStripping-Bench-Treatability-Study-2009.pdf

Christy Brown Attached please find two files: - a summary of i...

10/10/2012 02:53:25 PM

From: Christy Brown/R10/USEPA/US

Harry Craig/R10/USEPA/US@EPA, Emerald Laija/R10/USEPA/US@EPA, Mary To:

Queitzsch/R10/USEPA/US@EPA

Cc: Thabet Tolaymat/CI/USEPA/US@EPA, Kevin Schanilec/R10/USEPA/US@EPA, Linda

Meyer/R10/USEPA/US@EPA, Carla Fisher/R10/USEPA/US@EPA

10/10/2012 02:53 PM Date:

Lockheed treatment summary attached Subject:

Attached please find two files:

- a summary of information from the response to EPA's information request regarding treatment activities performed at the various units at the former Martin Marietta/Lockheed Martin site, and
- a pdf copy of a table provided in the response which appears to be a summary of approvals, permit modifications, temporary authorizations, etc. Note I have NOT reviewed this table and cannot confirm whether it is wholly consistent with other documents provided in the response.

Pplease note the Scrubber Sludge Ponds are not included in the summary as there was no indication in these documents that treatment activities were performed at these units, although some maintenance

activities (primarily trimming trees from the fenceline) are noted in the operating log.

Let me know if you have questions about these files.

Next up, an index of all documents provided in response to our questions regarding pilot studies and treatment activities.

Thanks, christy



Lockheed treatment activities.docx

PDF

Lockheed Binder 21A, Historical Document Review.pdf

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